



EPIDEMIC CEREBRO-SPINAL MENINGITIS. Report of Case with Interesting Complications.

By WM. B. SMITH, M. D., Los Angeles.

C. R., cook, age 26, was admitted to the Portis and Vaughn medical service of the Cook County Hospital on March 22, 1914. He was sent in from the examining room for diagnosis.

Examination on entrance showed a fairly nourished young white man in a semi-comatose condition, and no history was obtained at the time. Later he stated that he had been sick for four days before admission with headache, fever and general malaise. He had convulsions soon after entering the ward with limbs rigid, head thrown back, stertorous breathing, and sweating. He could be roused, but sensorium was much clouded.

Pupils equal and react to light.

Teeth show moderate pyorrhea.

Tongue coated but not bitten.

Ears negative.

Neck shows distinct rigidity and patient constantly puts hand to head as if aching. No appreciable cervical adenopathy.

Lungs negative.

Heart negative; pulse 80 to 90 on entrance.

Temperature 105 degrees.

Abdomen negative, but patient vomited several ounces of dark green slime during examination. This was not projectile.

Genitalia show small meatus, 16 F catheter will not pass.

Extremities: Kernig sign is positive especially on the right; Babinski sign present on both sides.

Tache cerebrale is positive.

Spinal puncture on entrance gave purulent fluid under considerable pressure: 16 cc. were removed for diagnosis.

Examination of fluid: Noguchi and Nonne tests were both positive; cell count gave 1900 per cmm., practically all polymorphonuclear leucocytes; great numbers of intra and extra cellular diplococci were present.

White blood count gave 18,400 per cmm; Dare gave Hb. of 80%.

8 p. m. of same day second puncture was made, 40 cc. of purulent fluid were removed, and 30 cc. of Flexner's serum injected.

Urine exam. showed albumen, a few hyaline and granular casts Sp. Gr. 1.020.

Course. During the night of March 22, temperature dropped to 99.8 at 11 p. m.

March 23—Patient was irrational again and temp. went up to 102. A second dose of 30 cc. Flexner's serum was given after removal of 36 cc. of spinal fluid; fluid was cloudy and showed 4000 polymorphonuclear cells per cmm. Intracellular diplococci were numerous. No growth on glucose agar.

March 25—Patient answered questions intelligently. Right pupil dilated, left pupil normal. Left wrist shows red and exquisitely tender swelling. Knuckle joint of right middle finger is red and tender.

March 26—Patient stuporous. Temp. up to 104. Sweats profusely.

March 27—Left knee swollen and tender. 50 cc. spinal fluid removed, and third dose of Flexner's serum injected. Spinal fluid was still cloudy but no organisms were to be found.

March 29—Patient brighter, says he cannot see out of left eye. Left knee more swollen and fluctuates above the patella.

March 30—Left knee was aspirated, 70 cc. of purulent fluid removed which contained the diplococci in great abundance. 15 cc. Flexner's serum were injected into this joint.

April 1—Patient complains of aching of the left knee. Left eye shows conjunctivitis, iritis, and flocculent exudates into the anterior chamber. Cannot see at all with this eye. Eye exam. by Dr. E. V. L. Brown: Left plastic iritis with reduction of vision to light and shadow. Advises pushing the atropine medication.

April 4—Some frontal headache especially over the left eye. Fluid is disappearing from the knee. Patient looks and acts well. Temp. 99 degrees.

April 7—Patient says he feels bad. Left shoulder is very lame. Nervousness is marked. Temperature 101 degrees. 30 cc. Flexner's serum were given at one dose intravenously. The injection was followed at once by burning sensation over the whole body, with some excitability of the patient; 10 minutes later he had a chill lasting 20 min.

April 8—Skin of arms and trunk shows small pink urticarial rash. Left pupil dilated slightly, anterior chamber clearer.

April 16—Patient continues to improve steadily. Has been allowed to sit up in chair. Left knee somewhat stiff. Left eye shows posterior synechia, and vision restricted to light and shadow. Right eye normal. Feels fine and is very hungry.

April 22—Patient walks about the ward and helps the doctor with the laboratory work. Temperature remains normal. Left knee somewhat stiff

and gives grating sensation to palpation, but gives him no trouble on walking.

April 25—Patient allowed to go home.

This case is reported because of the interesting complications and because of the author's earnest belief that all of them might have been averted by a more determined pushing of the serum medication.

It will be noted from the record that the patient received 90 cc. of Flexner's serum in five days, and later received 15 cc. into the knee joint, and 30 cc. intravenously. It is true that the patient recovered with the loss of vision in his left eye, and a pathologic knee joint, and for his recovery we were truly thankful then, and are still. But this same case would be treated now with two full 30 cc. doses the first 24 hours and a dose daily thereafter until all symptoms had subsided.

A review of all histories of cases diagnosed as epidemic cerebro-spinal meningitis in the files of the Cook County Hospital, in which Flexner's serum had been used, revealed some very interesting facts relative to the need of early and intensive serum therapy.

The records gave data on 43 adults (over 15 years of age) and 13 children.

Adults—Group 1. Sick one to four days before admission to the hospital. There were seven in this group who received serum to the varying amounts of 60 to 140 cc. during periods of from two to 10 days. These gave recoveries of 71.4 per cent., and fatalities of 28.6 per cent.

Group 2. Sick from six to 30 days before admission. There were 36 in this group who received serum to the varying amounts of 30 to 270 cc. depending on the length of life after admission. These gave recoveries of only 2.7 per cent., and fatalities of 97.3 per cent.

Children—Group 1. Same as group 1 above. There were 10 in this group who received serum in varying amounts from 15 to 120 cc. during periods from two to eight days. This group gave recoveries of 50 per cent.

Group 2. Sick from six to 14 days before admission. There were three in this group who received serum 30 to 100 cc. in periods from one to 11 days. This group gave recoveries of 33 per cent., and fatalities of 67 per cent.

Conclusions—1. That epidemic meningitis, in these records at least, is more fatal to children than to adults.

2. That the percentage of fatalities increases directly with the length of time the patient is sick before serum therapy is inaugurated.

3. That the plan of administration carried out in practically all these cases, that of giving one dose of serum and then waiting for development of symptoms before giving additional doses, is disastrous in its results. Personally I believe that the cases sick under four days should give recoveries of over 90 per cent., where serum therapy is pushed at least to the point of one 30 cc. dose every day, until temperature is normal, spinal fluid is clear, and all other symptoms have subsided.

SOCIETY REPORTS SACRAMENTO COUNTY.

The regular May meeting of the Sacramento Society for Medical Improvement was called to order 8:50 P. M. by President J. H. Parkinson.

Minutes read and approved.

Drs. Young, Lyman and Crawford were formally introduced to the Society by the President.

Cases reported:

Ambic Abscess of Liver by L. G. Reynolds.
Cancer of Liver in pregnant woman of 27 years, by A. M. Anderson.

Paper of the Evening: History Organization and Aims of the United States Public Health Service by J. R. Boggess, Surgeon in charge, San Francisco, Cal. Discussed by W. J. Hanna.

Application of C. L. Bittner read.

Report of Delegates from the State Society made by Drs. Gundrum and Jones.

Dr. Parkinson appointed the following committee: On the part of this society should take in the general scheme of preparedness and the participation of women in connection therewith.

W. J. Hanna, Chairman.

E. S. Loizeaux, G. Parker Dillon.

On the question of publicity of matters professional in the daily papers in connection with the County Hospital and the best means of using the influence of the Society to prevent its recurrence not only in connection with that institution but in all cases where the very desirable privacy attending the relations of the physician and his patient have been improperly and unnecessarily invaded.

T. J. Cox, Chairman.

A. C. Hart, G. L. Stevenson.

Adjourned.

F. F. Gundrum, M. D. Secretary-Treasurer.

SAN JOAQUIN COUNTY.

The regular monthly meeting of the San Joaquin County Medical Society was held Friday evening, May 26th at the residence of Dr. Charles R. Harry. The following members were present: Drs. H. E. Sanderson, S. P. Tuggle, H. Smythe, D. F. Ray, Minerva Goodman, R. R. Hammond, H. C. Petersen, L. L. Dozier, Mary Taylor, C. R. Harry, C. F. English, B. J. Powell, R. B. Knight, W. F. Priestly, E. A. Arthur, J. V. Craviotto, W. J. Young, R. T. McGurk, J. D. Young, H. J. Bolinger and D. R. Powell with Dr. William Watt Kerr of San Francisco as guest of the evening.

A very instructive paper on "Cases Illustrating Some Types of Arterio-Sclerosis" was given by Dr. Kerr. As the doctor wished to return home the same evening, the discussion by the members was cut short in order to allow Dr. Kerr to make the closing remarks.

After a short recess, the meeting was again called to order to hear the reports of the committees and adjourned to partake of delightful social repast.

DEWEY R. POWELL, Secretary.

The regular monthly meeting of the San Joaquin County Medical Society was held Friday evening, June 30th at the Receiving Hospital of the Stockton State Hospital.

Those present were: Drs. E. P. Clark, S. P. Tuggle, J. D. Young, R. R. Hammond, Margaret Smythe, W. W. Fitzgerald, C. F. English, J. T. Davidson, R. B. Knight, W. F. Priestly, Mary Taylor, Minerva Goodman and L. Dozier with Dr. Williamson as guest.

The Committee on Admissions reported favorably on the name of Dr. Warren T. McNeil and he was elected a member of the society.

The papers of the evening were presented by the staff of the State Hospital, each member taking up one type of insanity and presenting a clear con-